

**UNITED STATES PATENT AND TRADEMARK OFFICE**

*Examiner:* Galt, C.

*Docket No.:* 3745

*Art Unit:* 4182

*In re:*

*Applicant:* MAHLER, M., et al

*Serial No.:* 10/588,183

*Filed:* August 2, 2006

***REPLY BRIEF***

September 8, 2010

Commissioner for Patents  
P O Box 1450  
Alexandria, VA 22313-1450

This is a Reply Brief responsive to the Examiner's Answer to the Brief on Appeal, mailed on July 19, 2010.

In the Examiner's Answer the Examiner repeated the arguments presented in the Final Action, based on which in his opinion Claims 1, 2, 5-8 and 12 were rejectable under 35 USC 103(a) as being unpatentable over the U.S. patent to Arndt, representing first ground of rejection.

In accordance with the present invention a method for determining a thickness of material is proposed. The method is performed by penetrating the material, and in the inventive method a measurement signal in a gigahertz frequency range emitted using a single high-frequency transmitter completely penetrates the material to be investigated from its one surface to its opposite surface and is detected by a single high-frequency receiver. The thickness of the material is measured by at least two transit-time measurements of the measurement signal performed for various positions of the single high-frequency transmitter and the single high-frequency receiver operated in a same hand-held device. These features of the present invention are defined in independent Claims 1 and 12.

In the prior art applied by the Examiner, and in particular the patent to Arndt, it can be seen that the invention disclosed in this reference deals with a method for locating an object which is concealed in a medium. The method disclosed in this reference has nothing to do with a method for determining a thickness of the material. In the method disclosed in the reference the measurement signal goes through a medium in which an object is concealed, only over a part of thickness of the medium until it reaches the object inside the medium, is reflected from the object in the medium, and the signal reflected from the object is detected. It is completely clear that the measurement signal does not fully penetrate the material, but instead in the moment when it reaches the

object inside the material it is immediately reflected back by the object without penetrating through the material, and therefore cannot determine a thickness of the material.

Furthermore, the method disclosed in the reference has nothing to do with a method for determining a thickness of material from at least two transit-time measurements of the measurement signal, for various positions of the high-frequency transmitter and the high-frequency receiver. The device disclosed in the patent to Arndt can move laterally to the surface of the examined material, which however is not sufficient to determine thickness of the material, but provides measurements at different locations of the material to detect objects enclosed in the medium. In other words the Arndt device moves over the surface to detect inhomogeneities behind the surface.

Claims 1 and 12 should be considered as patentably distinguishing over the art and should be allowed.

In response to the Examiner's arguments presented with respect to a second ground of rejection to be reviewed on appeal, it is respectfully submitted that Claim 11, a further independent claim on file, defines, in addition to the above mentioned new features of the present invention defined in Claim 1, that the high-frequency transmitter and high-frequency receiver are operated on

the first surface of the material, and the measuring signal from the high-frequency transmitter is reflected back to the high-frequency receiver by a transponder located on a second surface of the material, which clearly defines that the signal passes through the whole thickness of the material from its first surface to its second surface.

The measurement signal disclosed in the patent to Arndt never reaches the second surface of the material to be reflected, for example by a transponder, but instead is reflected from an object located inside a medium spaced from the second surface.

The other references applied by the Examiner in combination, namely the patents to Nix, Stump, and McEwan also do not teach the new features of the present invention as defined in Claim 11.

None of the references discloses a method in which the high-frequency transmitter and the high-frequency receiver are operated on the first surface of the material, the measuring signal from the high frequency transmitter penetrates through the whole thickness of the material and reaches a second opposite surface of the material, and then is reflected back to the high frequency receiver by a transponder located on the second surface of the material.

Claim 11 should also be considered as patentably distinguishing over the art and should be allowed.

Reconsideration of the present application, reversal of the Examiner's rejection of the claims, and allowance of the present application is most respectfully requested.

Should the Examiner require or consider it advisable that the specification, claims and/or drawings be further amended or corrected in formal respects in order to place this case in condition for final allowance, then it is respectfully requested that such amendments or corrections be carried out by Examiner's Amendment, and the case be passed to issue. Alternatively, should the Examiner feel that a personal discussion might be helpful in advancing this case to allowance, he is invited to telephone the undersigned (at 631-549-4700).

Respectfully submitted,



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